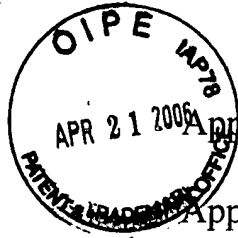


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## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE



Applicant:	Mark Budzik	)	
		)	
Application:	10/685,750	)	Gay Spahn
		)	Patent Examiner
Filing Date:	October 15, 2003	)	Art Unit 3763
		)	
Docket No.:	TRI4546P0170US	)	

**SUPPLEMENTAL REPLY BRIEF**

Mail Stop Appeal Brief - Patents  
 Commissioner for Patents  
 P.O. Box 1450  
 Alexandria, VA 22313-1450

Sir:

This brief responds to the Supplemental Examiner's Action (Answer) dated April 10, 2006.

Actually, it does not matter whether knurling a surface is regarded as roughening the surface, as knurling a surface impresses a pattern but does not remove material. Two pages downloaded from the Internet and illustrative of knurling are appended.

There is no evidence of record that, if a cellular polymer were used, knurling a surface would cause the knurled surface to be characterized by open cells of the cellular polymer.

Respectfully submitted,

By Allen J. Hoover  
 Allen J. Hoover  
 Reg. No. 24,103

April 20, 2006

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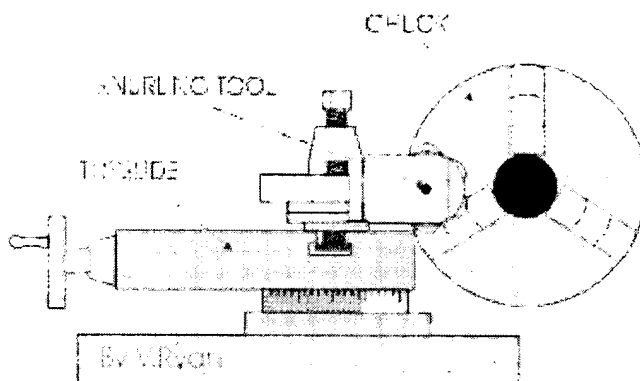
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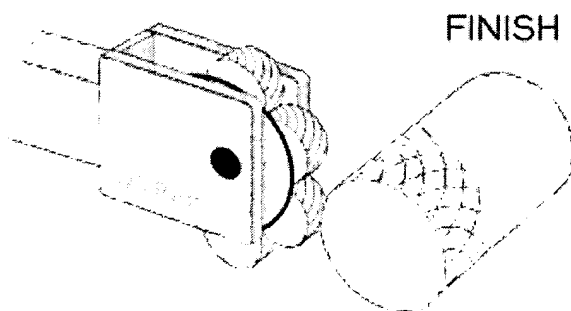
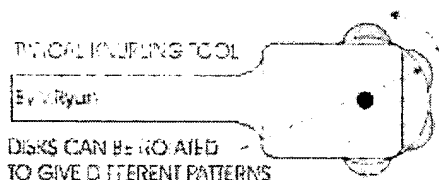
[CLICK HERE FOR INDEX PAGE](#)

## HOW TO USE A KNURLING TOOL

V. Ryan © 2003



A knurling tool is used to press a pattern onto a round section. The pattern is normally used as a grip for a handle. Apprentice engineers often manufacture screwdrivers. These have patterned handles, to provide a grip and this achieved through the technique called knurling. The pattern produced is called a 'knurled pattern'.



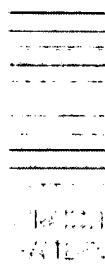
This diagram shows the knurling tool pressed against a piece of round section steel. The lathe is set so that the chuck revolves at a low speed. The knurling tool is then pressed against the rotating steel and pressure is slowly increased until the tool produces a pattern on the steel.

The automatic control lever is engaged which starts the automatic traverse of the saddle. As the saddle moves along the bed of the lathe the knurled pattern is pressed into the steel along its length.

If the traverse of the lathe is stopped and then reversed a diamond pattern is produced.

Depending on the knurling tool selected,

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a variety of knurled patterns can be produced. Three typical patterns are seen opposite

### QUESTIONS:

1. Draw a piece of equipment or a tool that has a knurled pattern. Explain why a knurled pattern is needed.
2. Using notes and diagrams, explain how the process of knurling is carried out.

[CLICK HERE FOR EQUIPMENT AND PROCESSES INDEX PAGE](#)

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